

**REMARKS**

Claims 1-5 are presented for examination. Claims 6-12 are withdrawn from consideration.

The specification has been amended in accordance with the Examiner's request to show that FIG. 16 represents background art.

FIG. 7 is corrected to make it consistent with FIG. 6. In particular, FIG. 6 shows that the capacitor C1 is included in the amplifier 101. Therefore, FIG. 7 is corrected to show the capacitor C1, and elements 104-107 and 109 of the amplifier 101.

Claim 1 is objected to because the Examiner believes that the phrase "cutoff frequency" would be more clear if it reads as "cutoff frequency  $f_c$ " so as to be consistent with claim 5.

This objection is respectfully traversed for the following reasons.

Claim 1 recites a filter element provided on said substrate to receive an output from said harmonic processing circuit for selectively passing a signal to be supplied to said non-reciprocal circuit element by using a predetermined frequency as a cutoff frequency.

It is respectfully submitted that those skilled in the art would understand what is claimed in claim 1 without the amendment suggested by the Examiner.

Claim 5 depends from claim 1 and specifies that a fundamental frequency is represented by  $f_0$ , and the predetermined frequency is represented by  $f_c$  that satisfies a relation of  $f_0 < f_c < 2f_0$ .

Accordingly, designation  $f_c$  is required to define the features recited in claim 5 but not in claim 1.

Claims 1-5 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Makino et al. in view of the Krauss et al. publication.

Claim 1 recites a high-frequency amplifier connectable to a non-reciprocal circuit element having an input impedance lower than an output impedance. The amplifier comprises:

- a substrate;
- an amplifier element provided on said substrate for receiving and amplifying an input signal;
- a harmonic processing circuit provided on said substrate for matching of harmonics included in an output signal from said amplifier element; and
- a filter element provided on said substrate to receive an output from said harmonic processing circuit for selectively passing a signal to be supplied to said non-reciprocal circuit element by using a predetermined frequency as a cutoff frequency.

Hence, claim 1 specifically requires the amplifier element, the harmonic processing circuit and the filter element to be provided on a common substrate.

The Examiner admits that Makino et al. does not disclose the harmonic processing circuit for matching of harmonics included in an output signal from the amplifier element. Krauss is relied upon for disclosing that output matching circuits are used to reduce harmonics.

The Examiner considers filter 6 of Makino to correspond to the claimed filter element. However, Makino discloses impedance conversion circuit 6 provided in isolator 1, i.e., in a non-reciprocal element, outside of amplifier 10. Accordingly, the circuit 6 is not

provided on a common substrate with an amplifier element, and cannot pass a signal to be supplied to the non-reciprocal circuit, as claim 1 requires.

Moreover, the impedance conversion circuit 6 is supplied with an output signal of output matching circuit 16, which is not a harmonic processing circuit. The Examiner relies upon Krauss for disclosing that output matching circuits are used to reduce harmonics. However, Krauss' teaching that output matching circuits may be used for reducing harmonics is not sufficient to suggest that the output matching circuit 16 of Makino is a harmonic processing circuit.

Accordingly, the circuit 6 does not receive an output from a harmonic processing circuit, as claim 1 requires.

Hence, neither Makino nor Krauss teaches or suggests a filter element provided on a common substrate with an amplifier element to receive an output from a harmonic processing circuit for selectively passing a signal to be supplied to a non-reciprocal circuit element, as claim 1 recites.

Also, none of these references discloses the harmonic processing circuit provided on a common substrate with the amplifier element and the filter element, as claim 1 requires.

It is well settled that the test for obviousness is what the combined teachings of the references would have suggested to those having ordinary skill in the art. *Cable Electric Products, Inc. v. Genmark, Inc.*, 770 F.2d 1015, 226 USPQ 881 (Fed. Cir. 1985). In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification. *In re Lulu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984).

As demonstrated above, the combined teachings of the references are not sufficient to arrive at the invention claimed in claim 1.

Claims 2-5 are defined at least for the reasons presented above in connection with claim 1. Moreover, the Examiner takes the position that the structure recited in claim 4 is obvious. The Examiner has failed to factually support his position. If the Examiner relied upon common knowledge of the art or "well known" prior art without expressly indicating such reliance, the Examiner is respectfully requested to cite a reference in support of her position (see MPEP 2144.03).

Accordingly, the rejection of claims 1-5 under 35 U.S.C. § 103 as being unpatentable over Makino et al. in view of the Krauss et al. publication is unwarranted and should be withdrawn.

Claim 1 has been amended to more clearly define the claimed harmonic processing circuit. In particular, claim 1, as amended, recites that the harmonic processing circuit is provided on the substrate for providing a proper output load of harmonics included in an output signal from the amplifier element to improve an efficiency of the amplifier element.

As demonstrated above, claim 1, without this amendment, is clearly defined over the prior art. Therefore, the claim amendment does not narrow the scope of the claims for reasons related to the statutory requirements for a patent.

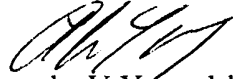
In view of the foregoing, and in summary, claims 1-5 are considered to be in condition for allowance. Favorable reconsideration of this application, as amended, is respectfully requested.

09/987,579

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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Enclosure: Amended Drawing

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